

**REMARKS**

By this Amendment, claims 6-8 are amended. Claims 1-5 and 9-17 remain as originally filed. As a result, claims 1-17 are pending in the application.

**Drawings**

Pursuant to paragraph 1 of the above-referenced Office Action, the drawings stand objected to under 37 C.F.R. §1.83(a). The Examiner asserts that the features of the invention specified in claim 5 (all limitations) and the claims 7-8 (the last limitation) must be shown in the drawings or canceled from the claims. Applicants submit that the drawings as filed show each and every feature specified in the claims. The specification beginning at page 6, line 3 states:

It will then been [sic: be] clear that, in Figures 3 and 4, nodes **A** and **B** form the inputs to stage 1, and nodes **C** and **D** are both the outputs of stage 1 and the inputs of stage 2. Nodes **E** and **F** are both the outputs of stage 2 and the inputs of stage 3, and nodes **G** and **H** are the outputs of stage 3.

And beginning at page 7, line 15:

... In particular, in Figure 3 and Figure 4, the preferred frequency sensitive device that consists of **L3**, **R2**, and **R3**, from stage 3, can be used to replace ... the **C5**, **C6**, **L2** circuit of stage 2. This means that a frequency-sensitive circuit as in stage 3 may also appear as the first or second stage. ... For example, in Figure 4 above, the stage 3 circuit can be switched with the stage 2 circuit, so that their order is reversed, ....

Accordingly, there is no set convention for numbering the inputs and the outputs of each stage of the frequency sensitive POTS splitter device. Furthermore, the frequency-sensitive circuit referred to as "stage 3" in the specification may be located anywhere in the device and in any combination with one or both of stage 2 and stage 1. Applicants have also amended claims 6-8 to provide proper antecedent basis for the claimed inductor, resistor and capacitor components, and the first, second and third stages. It should be noted that both claim 7 and 8

depend directly from claim 6, and thus, further recite a second stage in combination with the first stage recited in claim 6. Accordingly, Applicants respectfully request the Examiner to withdraw the objection to the drawings under 37 C.F.R. §1.83(a).

#### Claim Rejections – 35 U.S.C. §112

Pursuant to paragraphs 2 and 3 of the Office Action, claims 7-8 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that the last limitations of claims 7 and 8, respectively, are not supported by the specification and the drawings. As discussed above, in Figures 3 and 4, nodes A and B form the inputs to stage 1, and nodes C and D are both the outputs of stage 1 and the inputs of stage 2. Nodes E and F are both the outputs of stage 2 and the inputs of stage 3, and nodes G and H are the outputs of stage 3. Furthermore, claims 7 and 8 have been amended to more clearly recite that the first and second outputs of the second stage *form* the first and second inputs of the first stage, respectively. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection to claims 7-8 under 35 U.S.C. §112, first paragraph.

Pursuant to paragraphs 4 and 5 of the Office Action, claims 7-8 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner asserts that the last limitations of claims 7 and 8, respectively, are not supported by the specification and the drawings. It should be noted that the Examiner also refers to the limitations recited in claims 5, 12 and 17. However, those claims are not rejected, and thus, are not addressed by this response. As discussed above, in Figures 3 and 4, nodes A and B form the inputs to stage 1, and nodes C and D are both the outputs of stage 1 and the inputs of stage 2. Nodes E and F are both the outputs of stage 2 and the inputs of stage 3, and nodes G and H are the outputs of stage 3. Furthermore, claims 7 and 8 have been amended to more

clearly recite that the first and second outputs of the second stage *form* the first and second inputs of the first stage, respectively. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection to claims 7-8 under 35 U.S.C. §112, second paragraph.

### Claim Rejections – 35 U.S.C. §102

Pursuant to paragraphs 6 and 7 of the Office Action, claims 1-17 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,137,880 (Bella). With regard to independent claims 1, 6 and 13, the Examiner asserts that Bella illustrates in Figure 6 a frequency sensitive electrical circuit 370, comprising first and second inputs; at least one transformer circuit (L11 or L12 or L13) having a first winding connected to the first input and a second winding connected to the second input; a first load 374 connected in parallel to the first winding L12; a second load 376 connected in parallel to the second winding L12; first and second outputs connected to the first and second windings; and a capacitor C24 connected between the first and second outputs. See Office Action at page 4.

Applicants respectfully traverse the rejection. Bella discloses a low-pass filter designed to meet industry specification for insertion loss in the voice band, return loss in the voice band, and attenuation distortion in the DSL band, among other requirements. However, Bella utilizes an entirely different arrangement of components to shape the frequency response. In particular, the frequency sensitive device shown in Figure 6 includes a frequency-sensitive circuit 372 comprising a transformer L12 having a first winding 378 connected to a first input 378b and a second winding 380 connected to a second input 380a. The circuit 372 further comprises a first RC compensation network 374 bridging the transformer L12 that of a parallel connected first resistor R25 and first capacitor C22 in series with a second resistor R24. The circuit 372 further comprises a second compensation network 376 bridging the transformer L12 that consists of a parallel connected third resistor R22 and second capacitor C23 in series with a fourth resistor R23. The first compensation network bridges the transformer L12 between the first input 378b and the first output 378a, while the second compensation network 376 bridges the transformer L12 between the second input

380a and the second output 380b. The circuit 372 further comprises a third capacitor C21 connected between the first output 378a and the second output 380b.

In contrast, Applicants' claimed invention is a frequency-sensitive circuit for a frequency sensitive device (e.g., POTS splitter) comprising a transformer L3 having a first winding connected to a first input E and a second winding connected to a second input F. The first winding is connected in parallel to a first resistor R2 between the first input E and a first output G, while the second winding is connected in parallel to a second resistor R3 between the second input F and a second output H. Finally, a first capacitor C4 (C3 in Figure 4) is connected between the first output G and the second output H. The invention produces a frequency-sensitive circuit that meets the industry requirements for a POTS splitter device and improves return loss in the voice band without sacrificing the insertion loss in the voice band or the attenuation distortion in the DSL band. The claimed circuit comprises a first inductor *parallel* connected to *only* a first resistor and a second inductor parallel connected to *only* a second resistor. As a result, the frequency sensitive circuit of the claimed invention is less costly and easier to manufacture than prior frequency-sensitive circuits comprising at least one parallel connected capacitor and inductor (e.g., C28 and L13 in Figure 6).

For at least the reasons stated above, independent claims 1, 6 and 13 are patentable. Claims 2-5 depend directly or indirectly from patentable base claim 1, and thus, are likewise allowable for at least the same reasons. Similarly, claims 7-12 and 14-17 depend directly or indirectly from patentable base claims 6 and 13, respectively, and thus, are likewise allowable for at least the same reasons. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claims 1-17 under 35 U.S.C. §102(e).

## CONCLUSION

In view of the foregoing amendments and these remarks, Applicants respectfully request the Examiner to withdraw the objection to the drawings and the rejections to the claims, and to reconsider the application. This Amendment is fully responsive to the Office Action and places the application in condition for immediate allowance. Accordingly, Applicants respectfully request the Examiner to issue a Notice of Allowability for the pending claims. Applicants encourage the Examiner to contact the undersigned directly to further the prosecution of any remaining issues, and thereby expedite allowance of the application.

This Amendment does not result in any more independent or total claims than paid for previously. Accordingly, **no fee for excess claims is believed to be due**. The Examiner is hereby authorized to charge any other fee due in connection with the filing of this response, including any excess claims fee, to Deposit Account No. 19-2167. If a fee is required for an extension of time under 37 C.F.R. §1.136 not already accounted for, such an extension is requested and the fee should likewise be charged to Deposit Account No. 19-2167. Any overpayment should be credited to Deposit Account No. 19-2167.

Respectfully submitted,



Christopher C. Dreman  
Attorney for Applicants  
Registration No. 36,504  
P. O. Box 489  
Hickory, N. C. 28603  
Telephone: 828/901-5904  
Facsimile: 828/901-5206

**Dated: March 22, 2004**